



NTSB National Transportation Safety Board

Office of Safety Recommendations and Advocacy

Previous Safety Board Recommendations

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Safety Recommendations and Advocacy

Safety Issues

- Arrival landing distance assessments and safety margins
- Airplane-based friction measurements
- Runway safety areas

Arrival Landing Distance Assessments and Safety Margins

- A-06-16
 - Issued January 27, 2006
 - Urgent Recommendation

Immediately prohibit Part 121 operators from using reverse thrust credit in landing performance calculations

FAA Policy on Landing Performance Assessments

- Published June 7, 2006
- Proposed OpSpec/MSpec C082
 - requires 15% safety margin
 - in time for 2006-2007 winter season

FAA Response on A-06-16

- OpSpec yields greater benefit than prohibiting reverse thrust credit
- Safety Board agreed that OpSpec an acceptable alternative response to A-06-16

Withdrawal of OpSpec

- Considerable industry opposition
- August 2006, FAA to pursue formal rulemaking and not issue OpSpec
- SAFO 06012 issued - very similar to OpSpec
- OpSpec mandatory, SAFO not

SAFO 06012 Effect

- September 2006, meeting about decision to not issue OpSpec
- FAA to determine rate of compliance with SAFO
- FAA first provided rate of voluntary compliance with SAFO last week

SAFO Adoption

- Part 121 passenger airlines surveyed
- 65 responded
 - 27 adopt fully
 - 22 adopt in part
 - 16 did not adopt any part
- 92% of passengers on airlines that have adopted SAFO in full or mostly

A-06-16 Classification

- No requirement more than a year after issuing Urgent recommendation
- Starting second winter season with no effective action
- May 8, 2007
“Open—Unacceptable Response”

Continuing Need for Action

- February 18, 2007, Shuttle America Embraer-170 overrun of snow covered runway in Cleveland
- Arrival landing distance assessment not required



Continuing Need for Action



- April 12, 2007, Pinnacle Airlines Bombardier CRJ overrun of snow-covered runway in Traverse City, Michigan
- Arrival landing distance assessment required but not performed

Arrival Landing Distance Assessment

- Landing permitted without arrival landing distance assessment with adequate safety margin
- Continued Urgent need
- Critical to safe operation on contaminated runways
- New safety recommendation and urgent recommendation

- New recommendation supersedes A-06-16
- A-06-16 classified
“Closed—Unacceptable Action/Superceded”
- New recommendation will maintain
“Open—Unacceptable Response” of A-06-16

Airplane-Based Friction Measurements

World Airways flight 30, McDonnell Douglas DC-10, Overrun of icy runway
Boston-Logan Airport, Jan. 23, 1982



Airplane-Based Friction Measurements

As a result of the World Airways accident,
A-82-168 issued December 23, 1982

*In coordination with NASA, examine the
use of airplane systems to calculate and
display measured effective braking
coefficients*

A-82-168

May 5, 1987 FAA concerned that

- encourage operations from runways with very low friction coefficient
- of little value because of differences between dissimilar aircraft models

A-82-168

- April 1, 1988 Board replied
 - Disagreed that measurements from dissimilar airplanes are not meaningful
 - Disagree that it would encourage operations on slippery runways
 - System would provide basis for pilots to make better decisions
- “Closed—Unacceptable Action”

Quantify Runway Surface Condition

- FDR data used to obtain runway surface condition and braking effectiveness
- Data from one type of landing airplane used to estimate another type of airplane's braking ability and landing distance

Airplane Based Runway Condition

- More useful than
 - ground friction surveys
 - pilot braking action reports
 - type and depth reports
- Provides runway surface condition information of direct use to pilots, ATC, and airport maintenance
- New Recommendation

Runway Safety Areas



March 5, 2000,
Southwest flight
1455, Boeing 737,
runway overrun
Burbank-Glendale-
Pasadena Airport,
Burbank, California

Two Recommendations Issued

May 6, 2003

- A-03-11 - *Bring all RSAs up to dimensional standards if practicable*
- A-03-12 - *If not practicable, install EMAS*

FAA Response - Order 5200.8

- 456 substandard RSAs nationwide
- Order issued October 1999
 - program to bring all RSAs up to standards, whenever possible
- Upgrade RSAs at all airports to meet standards or some alternative by 2007
- Upgrade at least 65 per year through 2007

Current Status

- 303 RSA improvement projects completed
- All upgrades completed by 2015
- Over 90% of the 456 completed by 2010
- Last 10% between 2010 and 2015
 - in Alaska
 - unique complexities
 - short construction season
 - particularly challenging circumstances

A-03-11 Classification

- To understand FAA program, Board requested details of specific improvements made
- FAA provided last week
- A-03-11
“Open—Acceptable Response”

A-03-12 Response

- At Public Hearing FAA Director of Airport Safety testifies
 - Runway may be improved and project considered completed even though RSAs not meet dimensional standards and improved runway not have EMAS

A-03-12 Response

- February 2007 Safety Board indicates this is an unacceptable response
- Last week, FAA clarifies that EMAS cannot be installed in all locations with substandard RSAs

A-03-12 Status

- 24 EMAS installed at 19 airports
- 12 more at 7 airports in next year
- “Open—Acceptable Response”



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